Apprenticeship Manitoba

Manitoba

Gasfitter B
Level 1

Rev. February 2011

Apprenticeship Manitoba

Gasfitter B

Unit: A1 Introduction To Your Apprenticeship

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

Jobsite learning and teaching have long been fundamental to Gasfitter trade-practice, including its safety, health, and environmental implications. The chance to gain maximum benefit from workplace trade learning can be shaped by such complex factors as production schedules and jobsite politics. As adult trade-learners, Gasfitter apprentices at all levels of skill-development are encouraged to use their eyes, ears, prior knowledge, and interpersonal skills to encourage journeypersons to teach as well as to supervise them. This requires understanding the trade's dynamics, including the roles and responsibilities that order jobsite activity. Unit content outlines the trade's skill-requirements and long-term career possibilities. It includes suggestions about trade-related learning styles/strategies. It also introduces the concept of skills stewardship, stressing the obligations that apprentices incur in learning from journeypersons to 'pay it forward' by assisting other newcomers who will follow them into the trade. The unit's purpose is to provide this essential information about learning to learn as a Manitoba Gasfitter apprentice. Elsewhere in technical training, senior apprentices explore the importance of learning to teach in trade workplaces – a central function of Gasfitter journeywork.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe the structure and scope of the trade.	**30%**
a. Historical background, including apprentice experiences	
b. Structure/scope of the trade	
• International and national characteristics	
• Important features of practicing the trade in Manitoba	
• Trade and construction industry organizations	
• Generalists and specialists	
• Lead hands and other immediate supervisors	
• Geographic mobility	
• Job hierarchies and innovations	
2. Describe the Manitoba Gasfitter Apprenticeship Program.	**40%**
a. Concept and significance of skills stewardship	
• To the trade	
• To apprentices	
• To journeypersons	
• To employers	

b. Practical Training: on-site component of program
   - Roles/responsibilities of employer and journeyperson(s)
   - Roles/responsibilities of Apprenticeship Training Coordinator
   - Roles/responsibilities of apprentice, including record-keeping re: job experience

c. Technical Training: off-site component of program
   - Roles/responsibilities of instructors (including Related'-area faculty)
   - Roles/responsibilities of apprentices

d. Attendance requirements

e. Progression requirements

f. Reporting of grades

g. Other (as may be specified by instructor)

3. Describe special opportunities and challenges re: Gasfitter training. 30%

a. Adapting personal learning goals to program contexts
   - Principles of adult learning (including importance of self-direction)
   - Description/recognition of learning and teaching styles
   - Significance of work culture and interpersonal skills re: trade-learning
   - Integrating Technical Training and Practical Training content
   - Possibilities and perils of peer learning
   - Budgeting and other necessary personal arrangements
   - Identifying sources of support (e.g., upgrading trade-related math skills)

b. On-site learning challenges and opportunities
   - Significance of jobsite supervision roles and teaching styles (e.g., journey-level skills-coach vs. mentor)
   - Communication with journeypersons and employers
   - Coverage of prescribed tasks/subtasks that define the scope of trade, and the content of the certification exam administered to apprentices who are completing their program
   - Getting help and fixing mistakes
   - Maintaining personal record of trade-learning challenges/achievements (e.g., a learning journal, and/or a personal training plan, if possible, discussed with employers and others supporting the apprenticeship journey to certification)

c. In-school opportunities/challenges
   - Personal arrangements that support progress in technical training
   - "Baggage-handling" – self-assessing potential impacts of previous experiences (favourable/unfavourable) on current learning; availability of supports
   - Techniques for note-taking, record-keeping, and review
   - Relations with instructors (including 'Related'-area faculty)
   - College resources (library, support services, etc.)

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Apprenticeship Manitoba

Gasfitter B

Unit: A2 Trade Safety Awareness

Level: One

Duration: 10 hours

Theory: 7 hours

Practical: 3 hours

Overview:

Safe working procedures and conditions, injury prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers, and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to incidents or injury. It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe, and accident-free working environment. It is imperative to apply and be familiar with the Workplace Safety and Health Act and Regulations. As well, it's essential to determine workplace hazards and take measures to protect oneself, co-workers, the public, and the environment. Safety education is an integral part of Insulator apprenticeship training both in school and on-the-job. Unit content is supplemented throughout technical training by trade-specific information about Insulator safety hazards and precautions presented in the appropriate contexts of discussion and study. ***Note: No percentage-weightings for test purposes are prescribed for this unit's objectives. A "Pass/Fail" grade will be recorded for the unit. A Pass mark is assumed to be 70%. Therefore 70% is the mark to be submitted to the Apprenticeship Branch clerks for inputting into computer records.***

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify safety and health requirements.	**n/a**
a. Overview of The Workplace Safety and Health Act • Rights and responsibilities of employees under the Act • Rights and responsibilities of employers under the Act • Rights and responsibilities of supervisors under the Act b. Fourteen (14) regulations c. Codes of practice d. Guidelines e. Right to refuse • Explanation of right to refuse process • Rights and responsibilities of employees • Rights and responsibilities of employers • Rights and responsibilities of supervisors under the Act	
2. Identify personal protective equipment (PPE) and procedures. a. Employer and employee responsibilities as related to personal protective equipment. b. Standards: ANSI (U.S.A. standards), etc.	

c. Work protective clothing and danger if it fits poorly.
d. Gloves – Importance of proper glove selection (when handling chemicals, cold items, slivers, etc.)
e. Headwear – appropriate protective headwear when required and the approved type of headwear.
f. Eye protection – comparison and distinction of everyday eyeglasses, industrial safety glasses and safety goggles
g. Foot protection – when required according to safety standards
h. Hearing protection
   - Hazards of various noise levels (hearing protection must be worn)
   - Laws
   - Types of hearing protection
i. Respiratory protection – types, overview of proper selection
j. Fall protection – Manitoba requirements standards guidelines
   - ANSI (U.S.A. standards), etc.
k. Ladders and scaffolding
l. Safety principles for working with or around industrial trucks site-specific (forklifts, pallet trucks, etc.)

3. Identify regulations pertinent to care and cleanliness in the working area.

4. Identify the regulations relevant to the safe use of chemicals.

5. Identify regulations governing the use of scaffolding.

6. Identify regulations governing the use of ladders and related equipment.

7. Identify ergonomics.

a. Definition of ergonomics and conditions that may affect the body
   - Working postures
   - Repetition
   - Force
   - Lifting
   - Tools
   - Identify tool and safety equipment
   - Causes of hand tool accidents
   - equipment

8. Hazard recognition and control.

a. Safe work practices
b. Basic risk assessment
c. Injury prevention and control measures
d. Identification of hazards involved in pneumatic tool use and explanation of how to guard against them
e. Refrigerants
f. Toxic chemical (non-refrigerant)
g. High pressure fluids

9. Hazard of confined space entry.

a. Identification of a confined space
b. Hazards of a confined space (including physical and biological hazards)
c. Working in a confined space
d. Emergency response plan
e. Self-contained breathing apparatus (SCBA)

10. Identify first aid/CPR.

a. Overview of first aid regulation
b. Obligations of employers regarding first aid
   - Who is certified to provide first aid?
   - What to do while waiting for help?
   - Where is first aid kit?
c. Describe basic first aid requirements and techniques
   - Scope and limits of first aid intervention
   - Specific interventions (cuts, burns, abrasions, fractures, suffocation, shock, electrical shock, etc.)
   - What is it?
   - Interface with other services and agencies (e.g., Workers Compensation claims)
d. Describe basic CPR requirements and techniques
   - How do you get certified?
   - Scope and limits of CPR intervention (include varieties of CPR certification)

11. Identify the safety requirements as they apply to WHMIS with emphasis on:

a. WHMIS is a system
b. Provincial regulation under the Safety and Health Act
   - Each province has a WHMIS regulation
c. Federal Hazardous Products Act
d. WHMIS generic training:
   - WHMIS defined and the format used to convey information about hazardous materials in the workplace
   - Information found on supplier and workplace labeling using WHMIS
   - Hazardous materials in accordance with WHMIS
   - Compliance with government safety standards and regulations
e. Description of WHMIS (include varieties of WHMIS Certification)
   - Typology of WHMIS labels, symbols, and classifications
   - Scope and use of Materials Safety Data Sheets (MSDS)

12. Identifying and controlling hazards.

a. Basic control measures (injury prevention)
b. Safe work procedures
c. Explanation on the importance of industrial housekeeping
d. Employer responsibilities
e. How and where to store materials
f. Safety measures related to walkways, stairs and floor openings
g. Explanation of how to protect the worker and others when working in traffic paths

13. Describe the safe storage of stock equipment in service vehicles.

14. Discuss transportation of dangerous goods.

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Apprenticeship Manitoba

Gasfitter B

Unit: A3 Tools and Equipment (includes Piping, Soldering and Steel Welding)

Level: One

Duration: 65 hours

Theory: 35 hours

Practical: 30 hours

Overview:

This unit introduces Gasfitter apprentices to basic procedures for selecting, using, and maintaining tools and equipment in a variety of gasfitting-project settings. The principles and practical methods introduced here are pursued in greater depth and complexity throughout technical training.

Objectives and Content:		**Percent of Unit Mark (%)**
1.	**Describe use, selection, and maintenance of safety gear and personal protective equipment by Gasfitters.**	**5%**
2.	**Demonstrate basic techniques for use, selection, and maintenance of safety gear and personal protective equipment by Gasfitters.**	**5%**
3.	**Describe use, selection, and maintenance of hand tools by Gasfitters**	**9%**
4.	**Demonstrate basic techniques for hand-tool selection, use, and maintenance.**	**9%**
5.	**Describe the selection, use, and maintenance of power tools/equipment.**	**5%**
6.	**Demonstrate basic techniques for the selection, use, and maintenance of power tools/equipment.**	**9%**
7.	**Describe the selection, use, and maintenance of technical instruments, and testers, and other tools and equipment as specified by the instructor.**	**5%**
8.	**Demonstrate basic techniques for the selection, use, and maintenance of technical instruments, testers, and other tools and equipment as specified by the instructor.**	**9%**
9.	**Describe the selection, use, and maintenance of soldering tools and equipment.**	**9%**
10.	**Demonstrate basic techniques for selection, use, and maintenance of soldering tools and equipment.**	**10%**
11.	**Describe the selection, use, and maintenance of steel welding tools and equipment.**	**10%**

12.	**Demonstrate basic techniques for selection, use, and maintenance of steel welding.**	**10%**
13.	**Describe basic rigging and hoisting techniques.**	**5%**

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Apprenticeship Manitoba

Gasfitter B

Unit: A4 Drawings and Blueprints

Level: One

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

Gasfitters require a good, practical grasp of project design basics, as well as the ability to use technical drawings for a variety of trade tasks. Technical drawing is medium for exploring built structures in detail, as well as a tool for developing new ideas and solving problems. This unit of instruction is the program gateway to further learning about construction-project design variations, technical drawing, and blueprint-reading skills. The unit also offers Gasfitter apprentices a chance to apply some of the techniques, procedures, and conventions used in professional drafting and design. Elsewhere in technical training, apprentices will refine their skills in the use of trade documents through hands-on work with a variety of construction-project blueprints.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with drawings and sketches.	**7%**
2. Describe metric and imperial systems of measurement and the procedures used to perform conversions.	**7%**
3. Identify the types of drawings and describe their applications a. civil/site b. architectural c. mechanical d. structural e. electrical f. shop drawings g. sketches	**5%**
4. Identify types of symbols and describe their characteristics and applications.	**7%**
5. Identify drawing projections and views and describe their applications. a. change orders b. addendums c. as-builts d. specifications	**7%**
6. Identify drawing projections and views and describe their applications. a. Projections (orthographic, oblique, isometric)	**7%**

b. Views (plan, section, detail, elevation, cross section)

7. Describe the use of scales. 4%

8. Describe the procedures used for the care, handling and storage of drawings. 1%

9. Describe gas layout drawings. 5%

10. Interpret information on drawings. 13%

a. lines
b. legend
c. symbols and abbreviations
d. noted and specifications
e. schedules
f. scales

11. Demonstrate the procedures used for the care, handling and storage of drawings. 13%

12. Demonstrate basic sketching techniques. 13%

13. Demonstrate basic gas layout drawings. 11%

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Apprenticeship Manitoba

Gasfitter B

Unit: A5 Electrical Fundamentals and CE Code

Level: One

Duration: 60 hours

Theory: 50 hours

Practical: 10 hours

Overview:

Electrical theory is presented in a manner that is relevant and useful. The apprentice will learn about the basic fundamentals of electricity as related to the Gas Fitter in the piping trade as core curriculum for the level 1 apprentice. The apprentice will be eligible after successful completion of this core basic electrical curriculum and the associated Gas Fitter program level 1 as entrance requirements for the Gas Fitter level 2, where after completing this Level 1 and the level 2 electrical curriculum and the associated Gas Fitter program level 2, to take the provincial apprenticeship exam and upon passing that examination they will receive a limited electrical "E" endorsement license.

Objectives and Content:		**Percent of Unit Mark (%)**
1.	**Describe molecular electron theory as related to conductors, insulators, semi-conductors, unstable, and stable elements.**	**2%**
2.	**Describe the terminology, definitions, formula symbols, measurement symbols of the 4 properties of electricity of resistance, current, voltage, and power.**	**2%**
3.	**Describe the terminology associated with electricity as related to the trade.**	**1%**
4.	**Defining and calculating conversions of power such as watts, kilowatts, kilowatt hours, horsepower, btu's.**	**2%**
5.	**Identify the four parts to a circuit and identify circuit drawing symbols as well as open, closed circuit controls.**	**2%**
6.	**Explain Ohm's law and Power law – describe their applications and associated calculations.**	**2%**
7.	**Explain and identify ways in which electricity is generated and how we obtain our main source of electricity from MB Hydro power stations to Power lines to our distribution panels.**	**3%**
8.	**Identify electrical safety and recognize the three dangers of shock, arc, and blast, hazards of electricity, and describe safe work practices pertaining to electricity, including lock out/tag out, GFCI, AFCI, extension cords, fire extinguishers, disconnects, circuit breakers, fuses, guarding, bonding, grounding.**	**5%**
9.	**Identify tools and equipment used to test electrical circuits, their category and**	**8%**

voltage ratings, and describe their construction, applications, and procedures for use, and demonstrate proper application of each including:

a. Polarity
b. Analog
c. Digital
d. Voltmeter
e. Ammeter
f. Clamp-on Ammeter
g. Ohmmeter
h. Megohmmeter
i. Wattmeter
j. Micro Ammeter
k. Thermocouple probes
l. Voltage sticks
m Peak and auto-ranging and true RMS measurements.

10. Describe electromagnetism and inductance (including the operation of coils), rotating magnetic fields, generator applications, stored energy (Lenz's law), motor principles. **7%**

11. Describe electrical fundamentals with a focus on: **7%**

a. Defining, explaining, listing, calculating or demonstrating the difference between DC and AC, millivolts DC, 24 volt control circuits AC, 120 volt circuits AC, 240 circuits AC, what advantages AC has over DC in the generation, transmission and distribution systems and why it has these advantages, why high voltage DC has been used for transmission of enegy from distant generating stations, AC and DC sine waves, and how a sinusoidal voltage is generated when a coil is rotated in a uniform magnetic field.
b. Explaining, computing, describing, plotting, defining or comparing resistive circuits 1) the phase relationship between voltage and current in an AC circuit containing a resistance, 2) the effective values of AC current and voltages, and 3) a power curve, the current and voltage in phase

12. Describe single-phase transformers as follows: a) the construction of a simple transformer by naming its parts and showing the interrelationships which exist to polarity and efficiency, and b) how to solve problems for an ideal transformer involving current ratios, voltage ratios, power transfer, turns ratios, VA rating and calculating maximum loading. **7%**

13. Identify types of electrical circuits and describe their characteristics, operation and applications for a) series, b) parallel, and c) series-parallel. **10%**

14. Interpret electrical related information found on ladders/schematic and pictorial/wiring drawings and specifications. **7%**

a. Purpose of each type
b. Organization of each type
c. Symbols used for basic components

15. Describe the basic function of motors and identify their parts a) DC motors, b) AC motors, and c) ECM motors. **7%**

16. Describe Canadian Electrical Code (Introduction) with respect to a) conductor ampacities and sizing, the purpose of and sizing of bonding conductors, the purpose of and sizing of grounding conductors, and d) conductor color coding and purpose. **7%**

17.	**Demonstrate troubleshooting and critical thinking strategies.Interpret electrical related information found on ladders/schematic and pictorial/wiring drawings and specifications.**	**7%**
18.	**Demonstrate how to work with different shop projects and hands on electrical meter usage, wiring, analyzing, and troubleshooting circuits.**	**14%**

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Apprenticeship Manitoba

Gasfitter B

Unit: A6 Gas Code (includes Propane)

Level: One

Duration: 75 hours

Theory: 70 hours

Practical: 5 hours

Overview:

Gasfitters require a good, practical grasp of the Gas Code, including Propane. This unit of instruction is the program gateway to further gas and propane learning skills.

Objectives and Content:		**Percent of Unit Mark (%)**
1.	**Describe CAN/CSA B-149 codes, gas notices, bulletins, supplements.**	**10%**
2.	**Describe Acts and Regulations (e.g.,, gas and oil burner Act, gas and oil burner regulation)**	**5%**
3.	**Describe proper authorities regarding permit requirements such as the Dept. of Labour for gas permit requirement and proper authorities for gas turn-on.**	**10%**
4.	**Demonstrate the ability to contact proper authorities regarding permit requirements such as the Dept. of Labour for gas permit requirement and proper authorities for gas turn-on.**	**5%**
5.	**Reads and interprets Canadian Gas Codes and the Manitoba Regulation.**	**10%**
6.	**Describe Liquid Petroleum (LP) liquid installation**	**10%**
7.	**Describe LP pump, compressors and vaporizers**	**10%**
8.	**Describe LP liquid meters, mixing equipment, transport units, trucks, rail, storage facilities, utility systems, pipeline and supply storage, natural gas utility systems, and high and low pressure natural gas and LP gas supply systems.**	**15%**
9.	**Demonstrate the ability to install and maintain LP, handling equipment, pumps, compressors, vaporizers, meters.**	**15%**
10.	**Demonstrate the ability to maintain LP transport equipment and storage facilities, maintain and repair LP utility systems, pipeline and supply storage LP transport equipment and storage facilities, to install, service and maintain high and low pressure natural gas and LP gas supply systems.**	**10%**

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Apprenticeship Manitoba

Gasfitter B

Unit: A7 Trade Related Mathematics

Level: One

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

This unit of instruction is designed to provide the Gasfitter Apprentice with the knowledge of the imperial and metric systems, formulas and formula transposition, areas and volumes, elevations and grades, densities and pressures and offsets and percentages.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify and describe metric (s.i.) and imperial weights and measures, decimals and fractions, terms prefixes and relationships.	**10%**
2. Identify and describe formulas and formula transposition.	**7%**
3. Identify and describe the square root, perimeter and circumference.	**7%**
4. Identify and describe areas of rectangles, circles, triangles, trapezoids and surface areas.	**10%**
5. Identify and describe volumes of rectangular, cylindrical and irregular objects.	**10%**
6. Identify and describe Pythagora's theorem.	**8%**
7. Identify and describe special right angle triangles: a. 45° b. 30° - 60° c. 22-1/2°	**10%**
8. Identify and describe grade: a. Simple b. Percentage c. cm/m	**10%**
9. Identify and describe density, relative density and pressure in liquids and gases (kpa).	**10%**
10. Identify and describe parallel offsets.	**8%**
11. Identify and describe simple percentage, mark-up, net profit, gross profit.	**10%**

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Apprenticeship Manitoba

Gasfitter B

Unit: A8 Trade Related Science I (includes heat load calculations, fan laws and pumps)

Level: One

Duration: 35 hours

Theory: 35 hours

Practical: 0 hours

Overview:

Upon completion of this unit of instruction apprentices will be able to show understanding of metals and alloys and the principles of hydrodynamics, hydrostatics and pneumatics, deal with heat load calculations, fan laws and pumps, and be able to relate same to gasfitting problems.

Objectives and Content:	**Percent of Unit Mark (%)**

1. Describe with respect to sciences metals and alloys: **45%**

a. Define metals, alloys, conduction, melting point, specific heat, linear expansion, ductility, shear strength, tensile strength, compressive strength, working(safe) strength, malleable, ferrous, non-ferrous ,anneal, harden, temper.
b. Identify the most common metals
c. Identify the most common alloys
d. Define cost effectiveness
e. Identify and describe properties of metals
f. Identify and describe problems in linear expansion
g. Identify and describe bi-metal strip and its uses
h. Identify and describe various solder
i. Identify and describe wrought iron
j. Identify and describe corrosion (oxidation): chemical and electrochemical
k. Identify and describe methods in preventing corrosion
l. Identify and describe galvanic series
m Identify and describe factors aiding corrosion
n. Identify and describe corrosion resistant materials

2. Describe with respect to sciences hydrodynamics, hydrostatics and pneumatics: **40%**

a. Define hydrodynamics, hydrostatics, pneumatics, fluids, viscosity, adhesion, cohesion, capillary action, relative density, pressure (psi, psia, pascals, head).
b. Total pressure, transmission of pressure, vacuum, partial vacuum, siphon, manometer, buoyancy, laminar flow, turbulent flow, pitot tube, velocity head, venturi, bernoulli's theorem, hydraulic ram, water hammer, cavitation.
c. Identify and describe plumbing systems
d. Identify and describe flow of liquids and gases
e. Identify and describe pressurized systems

f. Identify and describe hydraulic jacks and presses
g. Identify and describe thrust blocks
h. Identify and describe air chambers
i. Identify and describe pumps
j. Identify and describe syphons
k. Identify and describe velocity head
l. Identify and describe bourdon type pressure gauge
m Identify and describe uses of buoyance
n. Identify and describe conversion of fps to gpm and gpm to fps, m/s to i/s and i/s to m/s
o. Identify and describe flow in venturis
p. Identify and describe bernoulli's theorem applied

3. Describe heat load calculations, fan laws and pumps. 15%

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Apprenticeship Manitoba

Gasfitter B

Unit: A9 Computers

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit of instruction is designed to provide the Gasfitter apprentice with the basic knowledge and understanding of computers. Provincial Advisory Committee members feel that being able to access electronic resources is a vital part of your trade education.
After completing this unit, apprentices will be able to learn, amongst other skills, to load software, input, save and print data, and shut down the operating system. Beyond the obvious benefits of the computer for word processing and organizational tasks, all apprentices will also be able to recognize and use the search operating engine features on the Internet, and read and send e-mail messages.
It is strongly recommended that ALL apprentices be urged to formulate, and submit to their instructor for review, a personal study plan. Such a plan most usefully might timetable a course of action for reviewing all relevant material(s) and for strengthening self-assessed areas of deficient skills/knowledge.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe basic computer technology and its broad applications in the gasfitter trade.	**7%**
2. Describe basic computer technology in its specific applications to one's everyday duties as a gasfitter.	**5%**
3. Describe basic computer technology in its specific applications to one's everyday duties as a gasfitter. a. DOS b. Windows c. NT d. Others	**5%**
4. Describe requirements for loading software and for file management.	**4%**
5. Describe internet access software.	**4%**
6. Describe requirements for configuring ports for communication between a computer and devices.	**4%**
7. Describe requirements for troubleshooting communication problems from a hardware and software perspective, with regard to proper cabling (modem/null modem), bit parity, and BAUD rates, and so on.	**6%**

8. Use operating systems for computer file management. 13%

9. Set up/configure computer environments. 13%

a. DOS
b. Windows
c. NT
d. Others

10. Use various computer operating systems. 13%

a. DOS
b. Windows
c. NT
d. Others

11. Load software and use proper file management techniques. 13%

12. Use internet access software. 13%

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Gasfitter B

Unit: A10 Communications with Co-workers and Others

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit of instruction is designed to provide the Gasfitter apprentice with the basic knowledge and understanding of communications with co-workers and others. Provincial Advisory Committee members feel that the informed use of basic communication and listening skills is a vital part of your trade education.
After completing this unit, apprentices will be able to learn, amongst other skills, to recognize and differentiate between PERT and Gantt charts, interpret charts for the purposes of communicating with others, and communicating planning and scheduling activities. In addition to acquiring basic presentation and listening skills, apprentice-learners will perform such basic employability skills as organizing letters, writing letters, job resumes, and cover letters.
It is strongly recommended that ALL apprentices be urged to formulate, and submit to their instructor for review, a personal study plan. Such a plan most usefully might timetable a course of action for reviewing all relevant material(s) and for strengthening self-assessed areas of deficient skills/knowledge.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe effective communication and listening skills. a. Describe work flow procedure and practices (e.g., PERT and Gantt). b. Describe skills in giving, taking, and relaying instructions. c. Describe appropriate rules of conduct during formal and informal meetings. d. Describe the components of an effective oral presentation of a job plan. e. Describe documentation requirements associated with such tasks as processing maintenance check-sheets, work orders, commission reports, inventory control, and performance appraisals. f. Describe Labour related Acts and regulations.	**33%**
2. Interpret instruction manuals.	**14%**
3. Write business letters and memos.	**13%**
4. Organize, write, and produce technical documents.	**13%**
5. Write instructions/procedures, and describe a process.	**24%**
6. Write job resumes and job application letters.	**3%**

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